



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/790,180

03/02/2004

Takeshi Arai

501.43537X00

3237

20457

7590

06/06/2006

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-3873

EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

h

Office Action Summary	Application No.		Applicant(s)	
	10/790,180		ARAI ET AL.	
	Examiner		Art Unit	
	Rudy Zervigon		1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 1-4 drawn to an invention nonelected with traverse in Paper No. September 19, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 5-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant's "exhaustion means" is not elaborated sufficiently to meet first and sixth paragraph requirements. For this reason, the Examiner cannot ascertain proper equivalents in the prior art and thus cannot perform an analysis under 112, 6th paragraph of the prior art.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukazaki; Hisashi et al. (US 5837094 A) in view of Gupta; Anand et al. (US 5837094 A). Tsukazaki teaches an apparatus (Figure 3; column 8, lines 10-67) for processing a sample (1, Figure 3; column 8, lines 10-67), comprising: a processing chamber (4,12, Figure 3; column 8, lines 10-67) provided with a platform (2, Figure 3) on which the sample (1, Figure 3; column 8, lines 10-67) is placed, the processing chamber (4,12, Figure 3; column 8, lines 10-67) being provided with a measurement window (15c,d, Figure 3; column 1, lines 44-59) formed on a wall surface (12, Figure 3; column 8, lines 10-67); exhaustion means ("booster pump"; column 6, lines 6-11) for evacuating the processing chamber (4,12, Figure 3; column 8, lines 10-67) gas injector (7, Figure 3; column 8, lines 10-67) for injecting a gas into the processing chamber (4,12, Figure 3; column 8, lines 10-67); a plasma generator (not shown; column 2, lines 27-36) for generating plasma in the processing chamber (4,12, Figure 3; column 8, lines 10-67) after the gas has been injected into the processing chamber (4,12, Figure 3; column 8, lines 10-67) by the use of the gas injector (7, Figure 3; column 8, lines 10-67) – claim 5

Tsukazaki further teaches:

- i. Tsukazaki's particle detector (15, Figure 3; column 1, lines 44-59) detects light scattered from a particle (column 3; lines 1-8) - claim 5, 8
- ii. The apparatus (Figure 3; column 8, lines 10-67) according to claim 5, wherein the laser (15a, Figure 3; column 1, lines 44-59) is introduced from outside the processing chamber (4,12, Figure 3; column 8, lines 10-67) to the inside of the processing chamber (4,12, Figure 3; column 8, lines 10-67) through a measurement window (15c,d, Figure 3; column 1, lines 44-59) which is provided in a space defined between the processing chamber (4,12, Figure 3; column 8, lines

Art Unit: 1763

10-67) and an exhaust passage (12, Figure 3; column 1, lines 44-59) of the exhausting means (12; Figure 3), as claimed by claim 6

iii. The apparatus (Figure 3; column 8, lines 10-67) according to claim 6, the particle detector (15, Figure 3; column 1, lines 44-59) is disposed outside of the processing chamber (4,12, Figure 3; column 8, lines 10-67) detects the scattered light through the measurement window (15c,d, Figure 3; column 1, lines 44-59), as claimed by claim 7

iv. A plasma processing apparatus (Figure 3; column 8, lines 10-67) control system (31, Figure 3) comprising: a plasma processing unit (Figure 3; column 8, lines 10-67) including a chamber (4,12, Figure 3; column 8, lines 10-67), a plate (2, Figure 3) on which a sample (1, Figure 3; column 8, lines 10-67) is placed, a plasma generator (not shown; column 2, lines 27-36), and a measurement window (15c,d, Figure 3; column 1, lines 44-59) formed on a wall (12, Figure 3; column 8, lines 10-67) of the chamber (4,12, Figure 3; column 8, lines 10-67), the processing unit (Figure 3; column 8, lines 10-67) being used for processing the sample (1, Figure 3; column 8, lines 10-67) placed on the plate (2, Figure 3) with the plasma generated by the plasma generator (not shown; column 2, lines 27-36) inside the chamber (4,12, Figure 3; column 8, lines 10-67); a particle; and a controller (31, Figure 3) for receiving a signal output from the processing apparatus (Figure 3; column 8, lines 10-67) and a detection signal from the particle detector (15, Figure 3; column 1, lines 44-59) to control the processing apparatus (Figure 3; column 8, lines 10-67) and contaminant data - claim 8

v. The plasma processing apparatus (Figure 3; column 8, lines 10-67) according to claim 8, wherein the controlling unit (31, Figure 3) compares the output signal ("end point"; column 5, lines 56-64; column 7, lines 31-40) from the processing unit (Figure 3; column 8, lines 10-67)

Art Unit: 1763

with the detection signal by the particle detecting unit (15, Figure 3; column 1, lines 44-59) to identify a contaminant source in the processing apparatus (Figure 3; column 8, lines 10-67), as claimed by claim 9

vi. The plasma processing apparatus (Figure 3; column 8, lines 10-67) control system (31, Figure 3) according to claim 8, wherein the laser (15a, Figure 3; column 1, lines 44-59) is introduced from outside of the processing chamber (4,12, Figure 3; column 8, lines 10-67) to the inside of the processing chamber (4,12, Figure 3; column 8, lines 10-67) through a measurement window (15c,d, Figure 3; column 1, lines 44-59), and the light scattered from the particle crossing the plane is monitored through the measurement window (15c,d, Figure 3; column 1, lines 44-59), as claimed by claim 10

vii. The apparatus of claim 5, wherein the exhaustion means (12; Figure 3 – see above) enables evacuation of the processing chamber (4,12, Figure 3; column 8, lines 10-67), and the plasma is generated after the processing chamber (4,12, Figure 3; column 8, lines 10-67) has been evacuated, as claimed by claim 11 – Applicant's claim requirement of "and the plasma is generated after the processing chamber has been evacuated" is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Tsukazaki does not teach that Tsukazaki's particle detector (15, Figure 3; column 1, lines 44-59) scans a laser (15a, Figure 3; column 1, lines 44-59) (15a, Figure 3; column 1, lines 44-59) beam in a plane inside of the processing chamber (4,12, Figure 3; column 8, lines 10-67) and outside of a region (4, Figure 3; column 8, lines 10-67) where the plasma is generated (between 7 and 2; Figure 3; column 2, lines 27-36) - claim 5, 8

Gupta teaches a similar apparatus (Figure 1B, 3B) including a scanning (335; Figure 3B) laser system (330, 335; column 8; line 41 – column 9, line 23) for particle detection and processing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Gupta's laser scanner (335; Figure 3B) to Tsukazaki's particle detector (15, Figure 3; column 1, lines 44-59).

Motivation to add Gupta's laser scanner (335; Figure 3B) to Tsukazaki's particle detector (15, Figure 3; column 1, lines 44-59) is for detecting particles in a concentrated "volume" as taught by Gupta (column 8; lines 26-40).

Response to Arguments

6. Applicant's arguments with respect to claims 5-10 have been considered but are moot in view of the new grounds of rejection.

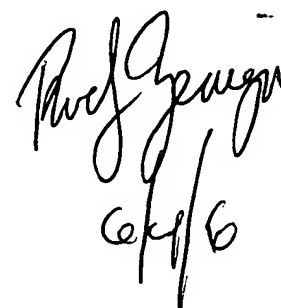
Conclusion

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1763

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.



Rudy Zervigon
Cef/6